

DETAILED GEOLOGICAL MAPPING RECORD TABLES

| Upper Trishuli-IHEP   |                  |            |                |              |        |             |                      |         | POSITION             |                     | Slope at entrance of ADIT NO.3 |   |                 |                |
|-----------------------|------------------|------------|----------------|--------------|--------|-------------|----------------------|---------|----------------------|---------------------|--------------------------------|---|-----------------|----------------|
| STAKE                 | TUNNEL DIRECTION | ROCK TYPE  | UCS            | GROUND WATER | RQD    | Jv          | Jn                   | Jr      | Ja                   | Jw                  | SRF                            | $Q = \frac{RQD}{J_n} \times \frac{J_r}{J_a} \times \frac{J_w}{SRF}$ | ROCK MASS CLASS | DATE           |
| 0-4m                  | NW 331           | Mt. B. Sch | 60             | GW1-GW4      | 50     | 19.7        | 3x2                  | 4       | 3                    | 1                   | 2.5                            | 4.4   | IIIb            | 2022-2-5       |
| NUMBER                | Occurrence       |            | SEPARATION (m) | JOINTS GROUP |        | PERSISTENCE | ROUGHNESS/APPEARANCE | FILLING | WEATHER OF ROCK WALL | FAULT               |                                | UCS   |                 |                |
|                       | Dip direction    | Dip angle  |                | SPACING      | NUMBER |             |                      |         |                      | INFLUENCED ZONE (m) | NATURE                         |   |                 |                |
| J <sub>1</sub>        | 195              | 63         | C2             | SP3          | 4      | C3          | R3                   | F3, F4  | W3                   |                     |                                | Very high   |                 | >250           |
| J <sub>2</sub> (core) | 275              | 85         | C1             |              | 1      | C2          | R5                   | F5      | W3                   |                     |                                | High  |                 | 100-250        |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | medium high   |                 | 50-100         |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | moderate  |                 | 25-50          |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Low   |                 | 5-25           |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Very low  |                 | 1-5            |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | RQD%  |                 |                |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Excellent quality   |                 | 90-100%        |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Good quality  |                 | 75-90%         |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Fair quality  |                 | 50-75%         |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Poor quality  |                 | 25-50%         |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | Very poor quality   |                 | <25%           |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GROUNDWATER CONDITION   |                 |                |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GW1   |                 | Completely dry |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GW2   |                 | Damp           |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GW3   |                 | Wet            |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GW4   |                 | Dripping       |
|                       |                  |            |                |              |        |             |                      |         |                      |                     |                                | GW5   |                 | Flowing        |

| SEPARATION/APERTURE     | SPACING OF JOINTS | PERSISTENCE       | ROUGHNESS/APPEARANCE       | FILLING                               |                      | WEATHER OF ROCK WALL    | FAULT NATURE                      |
|-------------------------|-------------------|-------------------|----------------------------|---------------------------------------|----------------------|-------------------------|-----------------------------------|
| C0:Very tight <0.1mm    | SP1:VERY WIDE >2m | C1:Very low <1m   | R1:very rough surfaces     | F1: rock sillar                       | F8: Breccia          | W1:unweathered          | FC1: downthrown fault             |
| C1:Tight 0.1-0.5mm      | SP2:WIDE:0.6-2m   | C2:Low 1-3m       | R2:rough surfaces          | F2: rock sliver                       | F9: Cataclasite      | W2:slightly weathered   | FC2:层 upthrown fault              |
| C2:moderately open      | SP3:200-600mm     | C3:medium 3-10m   | R3:slightly rough surfaces | F3: rock fragments                    | F10 Mylonite         | W3:moderately weathered | FC3:层 strike-slip fault           |
| C3:open joints 2.5-10mm | SP4:60-200mm      | C4:High 10-20m    | R4:smooth surfaces         | F4: rock powder                       | F11: Fault clay      | W4:highly weathered     | FC4: Crushed bedding plane (zone) |
| C4:Wide 10-30mm         | SP5:<60mm         | C5:Very high >20m | R5:slickensided surfaces   | F5: Calcium film                      | F12: Sliced rock     | W5:completely weathered |                                   |
| C5:Very wide >30mm      |                   | E0: Left wall     | A1: planar                 | F6: Calcite vein                      | F13: argillized seam | W6:residual soil        | FC5: Alteration zone              |
|                         |                   | E1: Top wall      | A2: stepped                | F7: Quartz vein                       | F14: clay course     |                         | FC6: fault striation              |
|                         |                   | E2: Right wall    | A3: undulating             | F15: weakintercalated layers siltized |                      |                         |                                   |
|                         |                   |                   |                            | F16:Fractured zone                    |                      |                         |                                   |

RECORD: Chen Guojing

DAY 5 MONTH 2 YEAR 2022



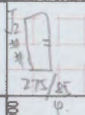
CHECK: You Xiao Wei

DAY 5 MONTH 2 YEAR 2022



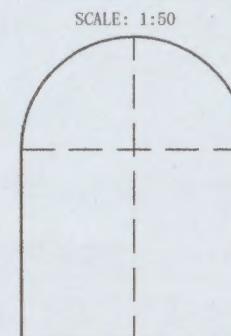
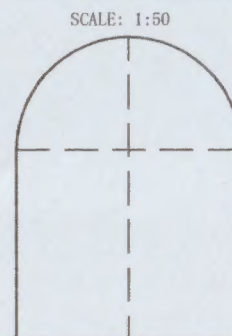
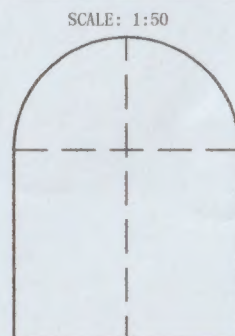
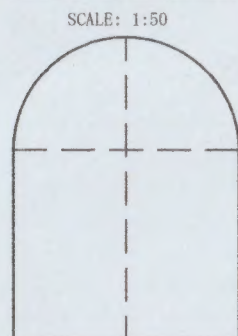
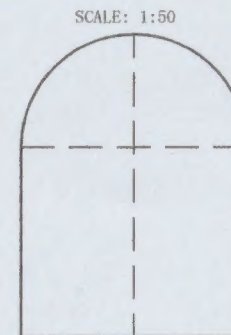
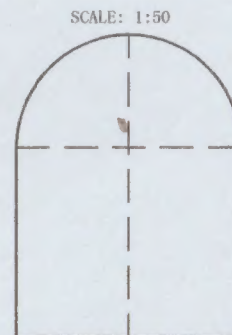
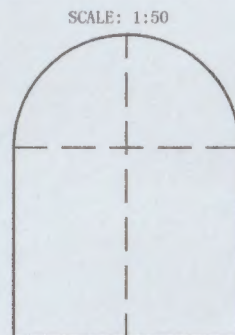
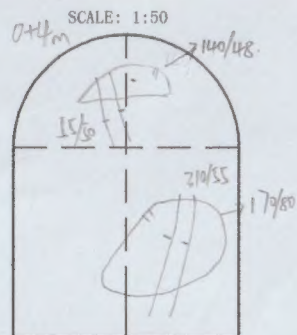
# GEOLOGICAL LOGGING MAP OF ADIT NO. 3




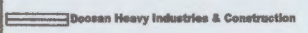
SCALE: 1:100

|                     |  |
|---------------------|--|
| LEFT WALL           |   |
| ROOF                |  |
| RIGHTWALL           |   |
| CHAINAGE (m)        | 0+000 0+010 0+020 0+030 0+040 0+050  |
| DIRECTION OF TUNNEL | N29° W   |
| WATER CONDITION     | Surface infiltration   |
| ROCK TYPE           |  |
| VALUE OF Q          |  |
| ROCK MASS CLASS     |  |

## Legend

|  |   |  |   |
|--|---|--|---|
|  | Interbedded Mica Schist and Quartz-Schist |  | Zone of fracture                              |
|  | Gneiss                                    |  | Joint number and attitude (Dip direction/Dip) |
|  | STEEL ARCH SUPPORT                        |  | Fault number and attitude (Dip direction/Dip) |
|  | SKETCHED WITH MESH                        |  | Flowing                                       |
|  | Lithology contact line                    |  | Dripping                                      |
|  | Slightly weathered                        |  | Moderately weathered                          |



| REFERENCE DRAWINGS   |                |             |          |       |       |
|--|----------------|-------------|----------|-------|-------|
|  |                |             |          |       |       |
| SYMBOL AND LEGEND  |                |             |          |       |       |
|  |                |             |          |       |       |
| FOR INFORMATION  |                |             |          |       |       |
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| REV.   | DATE           | DESCRIPTION | DRAWN    | CHGD. | APPD. |
|  |                |             |          |       |       |
| PROJECT TITLE  |                |             |          |       |       |
| Upper Trishuli-1 HEP (216MW)   |                |             |          |       |       |
| OWNER  |                |             |          |       |       |
|   |                |             |          |       |       |
| OWNER'S ENGINEER   |                |             |          |       |       |
|    |                |             |          |       |       |
| CONTRACTOR   |                |             |          |       |       |
|   |                |             |          |       |       |
| DRAWING TITLE  |                |             |          |       |       |
| GEOLOGICAL LOGGING MAP OF VENTILATION TUNNEL   |                |             |          |       |       |
| INDEX  | DRAWING NUMBER | SHEET NO.   | REV. NO. |       |       |
| A  | Sketch         | 1 OF 1      | 0        |       |       |

A1 1594 x 641 WPD 1